CONTRIBUTION OF THE MESA PROJECT TO THE IMPLEMENTATION OF THE AU SPACE STRATEGY

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The 12th EUMETSAT User Forum in Africa

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Kigali, Rwanda

Outline

- Background
- Objectives
- Status
- Partner Contribution

Background

- Strategic cooperation framework on EO-based services between Europe and Africa
- Addressing the need for reliable and timely EO data, products and services
- Building on Previous Initiatives

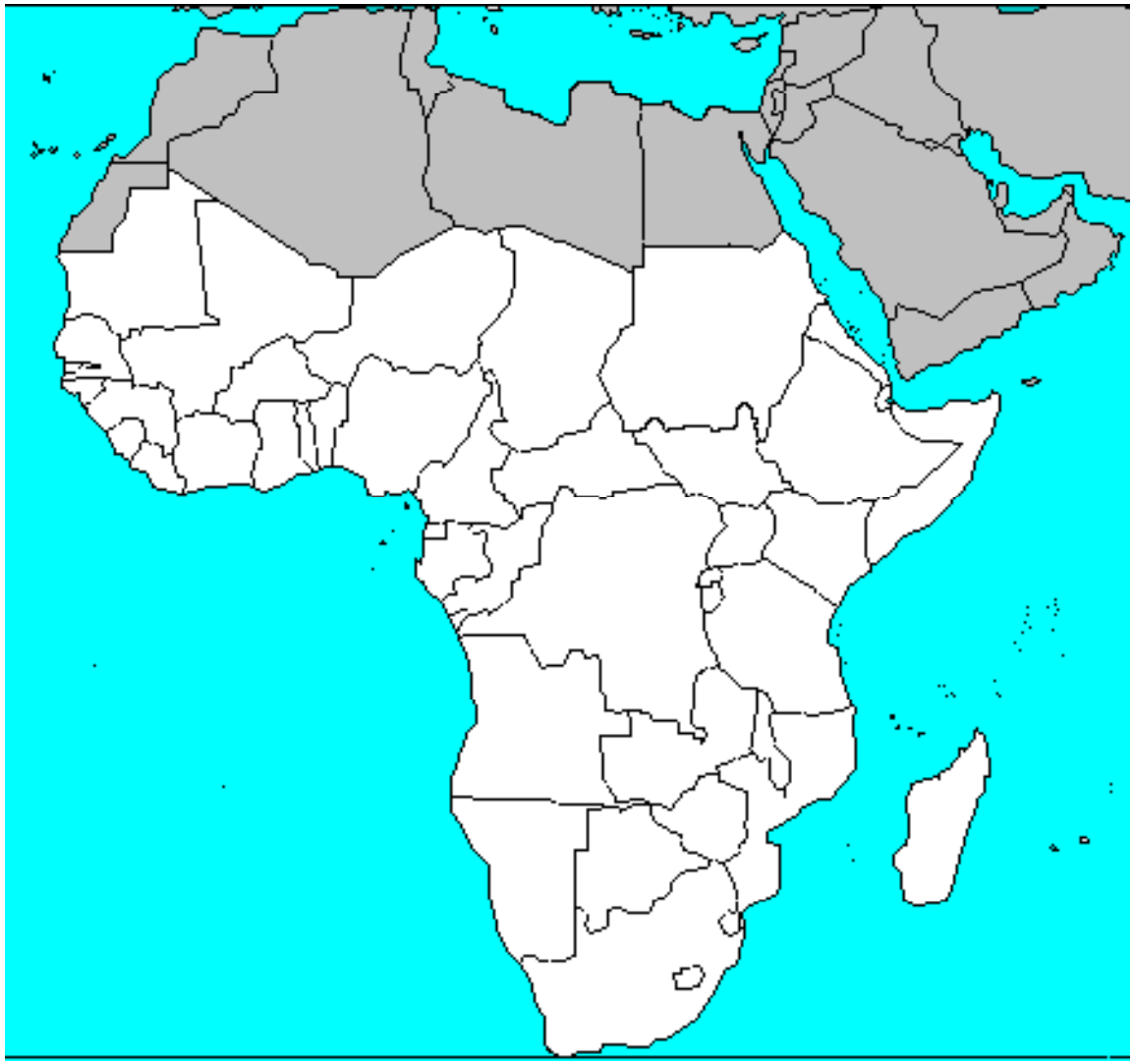
PUMA → **AMESD** → **MESA** (Monitoring for Environment and Security in Africa)

Meteorology

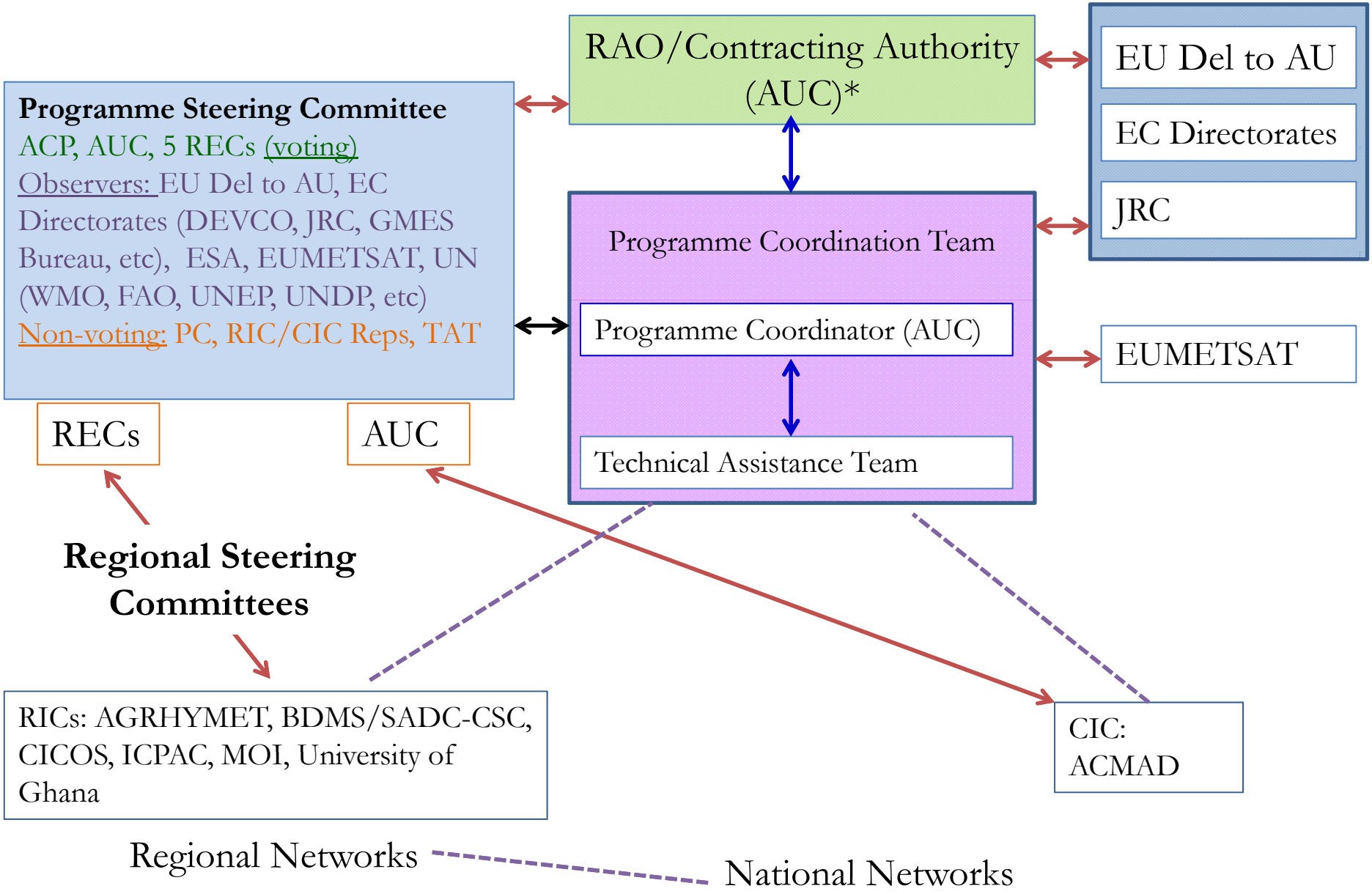
Meteorology + Environment

Meteorology + Environment + Climate Services

Scope



Programme Structure



Thematic Actions

- Organised around themes as prioritised by regions
- Implemented by Regional specialized technical institutions

Region/IC	Thematic Action
CEMAC/ CICOS	Management of Water Resources (for fluvial transportation and environmental assessment)
ECOWAS/ AGRHYMET	Water Management for Cropland and Rangeland Management
ECOWAS/ University of Ghana	Coastal and Marine Resource Management
IGAD/ICPAC	Land Degradation Mitigation, Natural Habitat Conservation and Forest Information System
IOC/MOI	Mauritius Oceanography Institute
SADC/(BDMS/ SADC-CSC)	Agricultural and Environmental Resource Management
Continental (AUC) /ACMAD	Support to Climate Services (Climate Change Monitoring)

Objective and Purpose

To support African decision-makers and planners in designing and implementing national, regional and continental policies and development plans towards sustainable development

Increase information management, decision making, and planning capacity of African regional and national institutions

Project Outputs

1. Improved access to EO data (infrastructure support and data policies/agreements)
2. Operational information services
3. Cross-fertilisation, continentalisation of services, & international collaboration
4. Political and policy frameworks
5. Capacity enhancement

Output 1: Data Access

- Infrastructure & agreements
- **MESA & PUMA 2015 Stations**
  - Tender evaluation (RAIDEG, RIC representatives, AUC, EUD, EUMETSAT, JRC and TAT
  - Supply contract signed in May 2015 (Telespazio)
  - Factory Acceptance Test (Nov. 2015 - RAIDEG, AEMAC, IMTR, JRC and EUMETSAT)
  - Deployment
  - Additional 17 more stations (16 to ECOWAS & 1 to IGAD)

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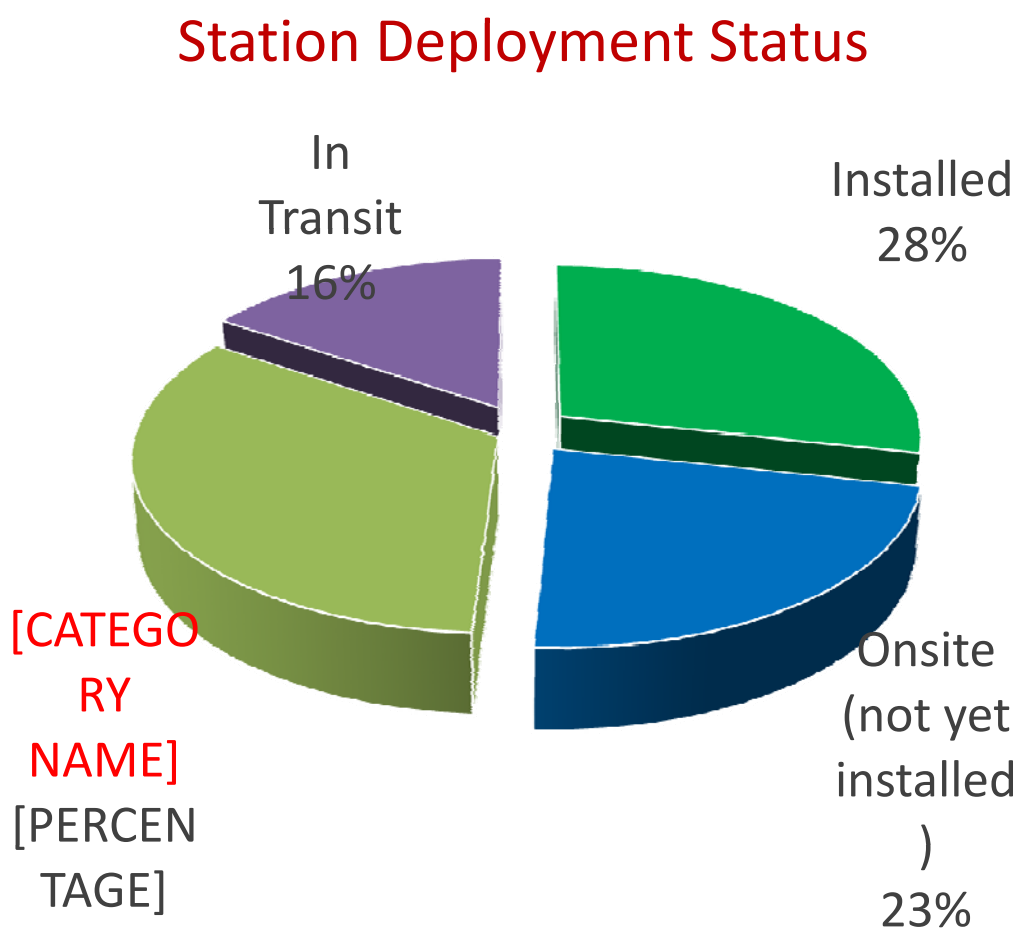
Output 1: Station Deployment

- 146 (85 %) of the stations are in beneficiary countries
- 27 (16%) are in Transit



Output 1: Agreements for Data Access

- MOU between AUC and EUMETSAT
- Copernicus Program
  - Sentinel 3 marine data and products
  - Sentinel 3 land data and products
- RICs/CIC agreements with data providers
  - e.g. UOG with exactEarth and others
  - BDMS with SANSA
  - …

Output 2: Products and Services

- **18 Services (7 new & 11 continuing from AMESD)**

RICs/CIC		ACMAD		AGRHYMET			CICOS		BDMS				MOI		ICPAC			UG	
Milestones	Service #s	1	2	1	2	3	1	2	1	2	3	4	1	2	1	2	3	1	2
MS-1 Analysis																			
MS-2 Design																			
MS-3 Development																			
MS-4 Integeration																			
MS-5 Oper. service																			
MS-6 Peer Review																			
MS-7 User Manual																			
Completed Milestone(MS)																			

Output 3: Cross-fertilization

S. No.	From	To	Service	Remark
1	BDMS/SADC-CSC	ICPAC	Agriculture Service	A first bulletin produced
2	MOI	UG	Fisheries resource management	Bulletins and maps are being produced
3	MOI	UG	Monitoring of physical oceanography variables	

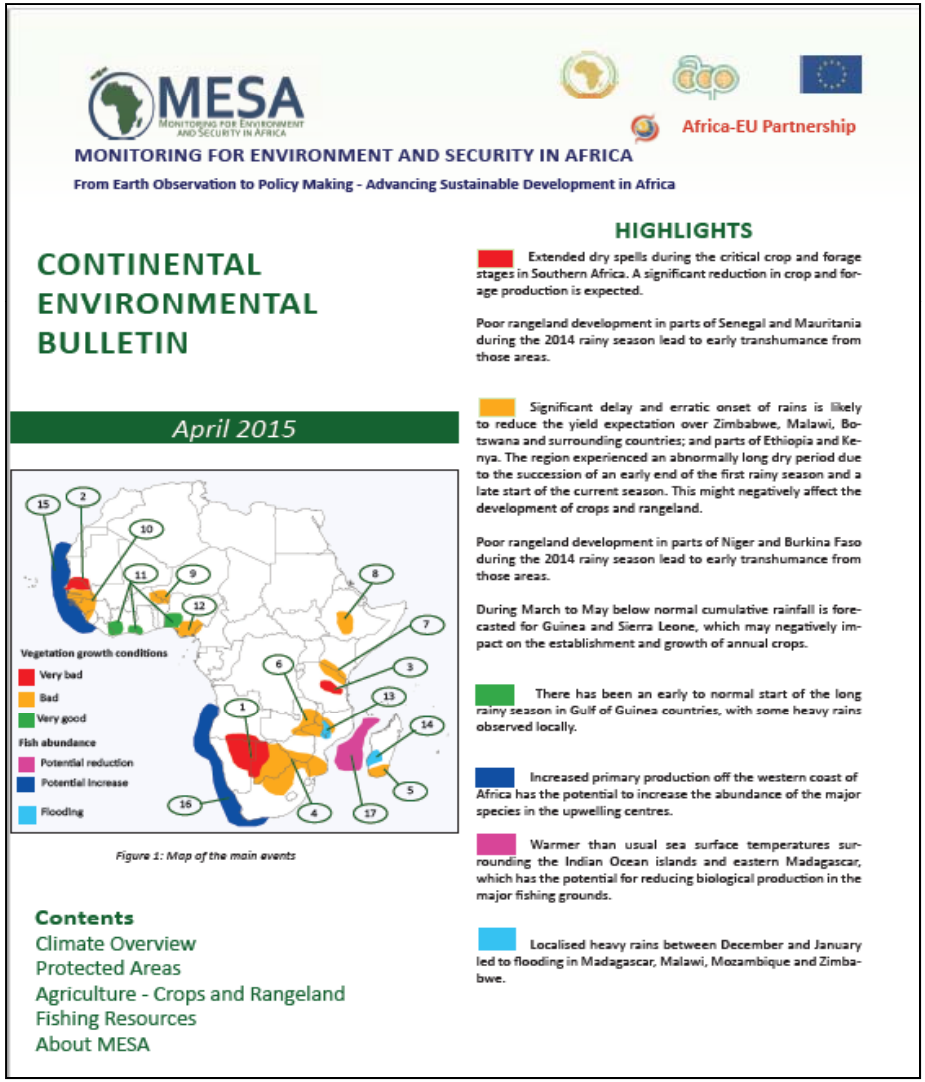
Output 3: Cross-fertilisation

S. No.	From	To	Service	Outputs
4	UG-MESA	MOI	Monitoring of Coastal Environment	Technical support: Support in the development of MOI's new service (coastal erosion monitoring and vulnerability assessment)
5	BDMS/SADC-CSC	MOI	Flood	Training on flood management (Another training planned)
6	ICPAC	AGRHYMET	Land degradation	Methodology transfer: ARGIS based methodology transferred to 6 countries in ECOWAS region

Output 3: Cross-fertilization & Knowledge Transfer

N°	Transfer from	Transfer to	Service or knowledge concerned
1	BDMS/SADC-CSC	AGRHYMET	Wild fire (Fire risk assessment)
2	AGRHYMET	ICPAC	Range land/Pastoralism Service
3	UoG	BDMS/SADC-CSC	Marine
4	UG-MESA	CICOS	- Fisheries resource management (detection of PFZ; and, Overlay PFZ maps with vessel traffic information)
5	UG-MESA	CICOS	Monitoring and forecasting of ocean conditions

Output 3: Continentalization



MESA
Monitoring for Environment and Security in Africa

Africa-EU Partnership

MONITORING FOR ENVIRONMENT AND SECURITY IN AFRICA

From Earth Observation to Policy Making - Advancing Sustainable Development in Africa

CONTINENTAL ENVIRONMENTAL BULLETIN

April 2015

Figure 1: Map of the main events

Contents

Climate Overview
Protected Areas
Agriculture - Crops and Rangeland
Fishing Resources
About MESA

HIGHLIGHTS

Extended dry spells during the critical crop and forage stages in Southern Africa. A significant reduction in crop and forage production is expected.

Poor rangeland development in parts of Senegal and Mauritania during the 2014 rainy season lead to early transhumance from those areas.

Significant delay and erratic onset of rains is likely to reduce the yield expectation over Zimbabwe, Malawi, Botswana and surrounding countries; and parts of Ethiopia and Kenya. The region experienced an abnormally long dry period due to the succession of an early end of the first rainy season and a late start of the current season. This might negatively affect the development of crops and rangeland.

Poor rangeland development in parts of Niger and Burkina Faso during the 2014 rainy season lead to early transhumance from those areas.

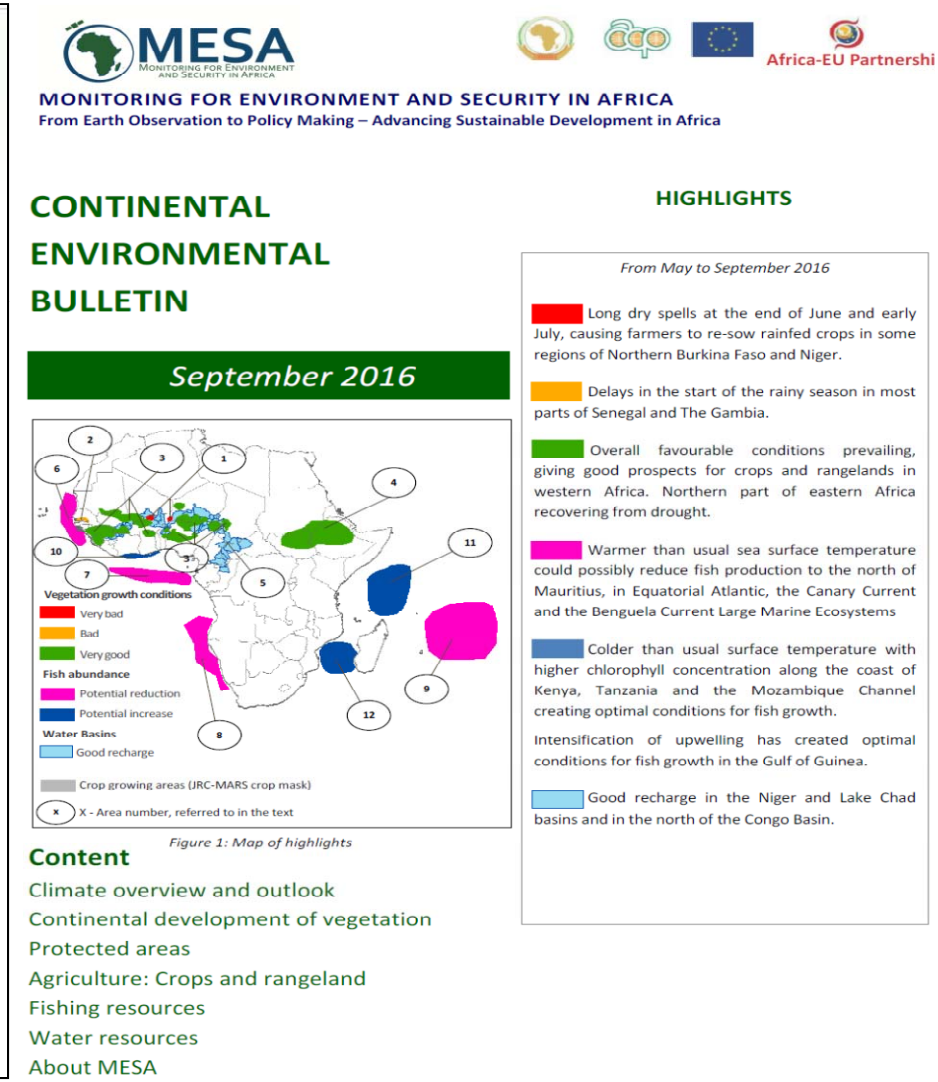
During March to May below normal cumulative rainfall is forecasted for Guinea and Sierra Leone, which may negatively impact on the establishment and growth of annual crops.

There has been an early to normal start of the long rainy season in Gulf of Guinea countries, with some heavy rains observed locally.

Increased primary production off the western coast of Africa has the potential to increase the abundance of the major species in the upwelling centres.

Warmer than usual sea surface temperatures surrounding the Indian Ocean islands and eastern Madagascar, which has the potential for reducing biological production in the major fishing grounds.

Localised heavy rains between December and January led to flooding in Madagascar, Malawi, Mozambique and Zimbabwe.



MESA
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MONITORING FOR ENVIRONMENT AND SECURITY IN AFRICA

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CONTINENTAL ENVIRONMENTAL BULLETIN

September 2016

Figure 1: Map of highlights

Content

Climate overview and outlook
Continental development of vegetation
Protected areas
Agriculture: Crops and rangeland
Fishing resources
Water resources
About MESA

HIGHLIGHTS

From May to September 2016

Long dry spells at the end of June and early July, causing farmers to re-sow rainfed crops in some regions of Northern Burkina Faso and Niger.

Delays in the start of the rainy season in most parts of Senegal and The Gambia.

Overall favourable conditions prevailing, giving good prospects for crops and rangelands in western Africa. Northern part of eastern Africa recovering from drought.

Warmer than usual sea surface temperature could possibly reduce fish production to the north of Mauritius, in Equatorial Atlantic, the Canary Current and the Benguela Current Large Marine Ecosystems

Colder than usual surface temperature with higher chlorophyll concentration along the coast of Kenya, Tanzania and the Mozambique Channel creating optimal conditions for fish growth.

Intensification of upwelling has created optimal conditions for fish growth in the Gulf of Guinea.

Good recharge in the Niger and Lake Chad basins and in the north of the Congo Basin.

Output 4: Policy Frameworks

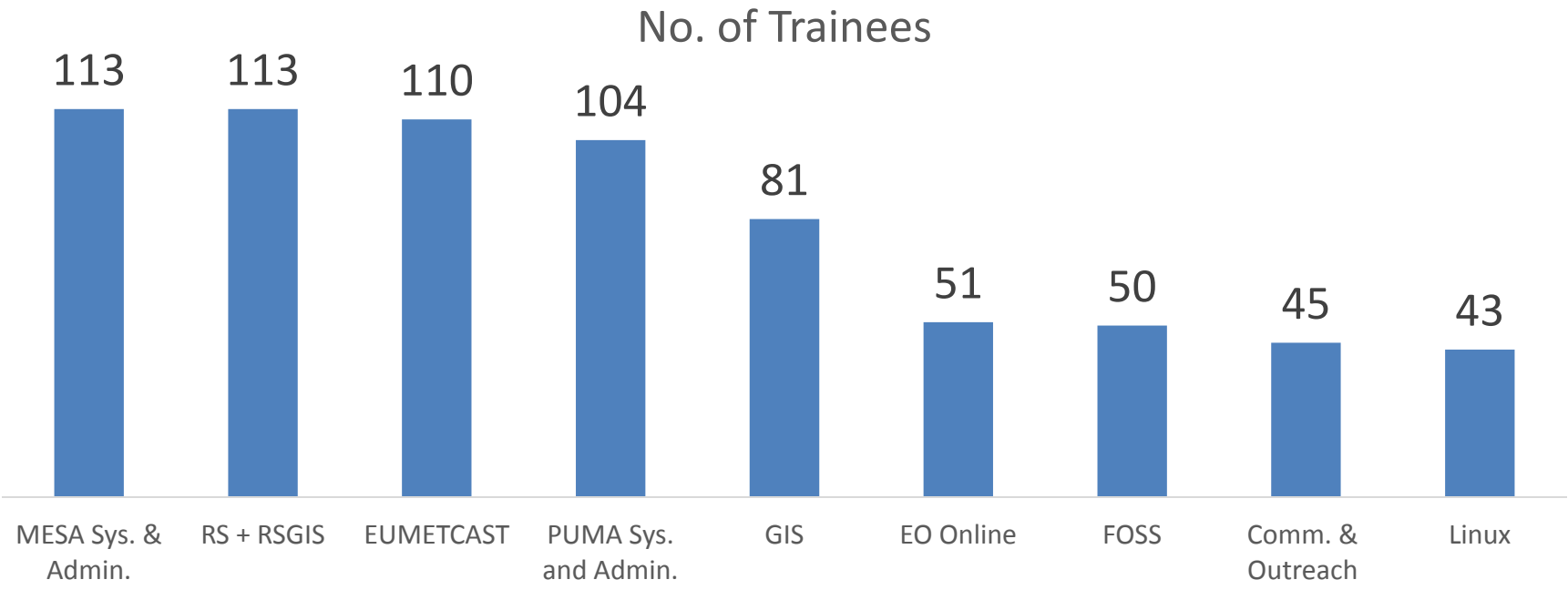
- Regional Steering Committees are established in all RECs
- Continental Steering Committee for the Continental Thematic Action on Climate Services (ACMAD)
- Draft EO Policy in IGAD
- Policy Dialogues Days
- MESA Fora

Output 4: Policy Frameworks

- Environmental governance policy framework document
- Inter-regional knowledge sharing
- National networks are established/reactivated in 87 % of the MESA beneficiary countries
- Network of Experts

Capacity Enhancement

- MoUs between RICs and Universities within Regions
- Agreements between AUC and WMO Regional Training Centres
- Training in nine (9) courses derived from TNA is being conducted (http://lms.training4mesa.org)
- So far 710 experts trained (11% female)



574 experts from different countries trained by RICs/CIC

COLLABORATION WITH PARTNERS

RAIDEG

- Tender evaluation
- Factory Acceptance Test

EC Joint Research Centre (JRC)

- JRC commitment under the AA:
  - eStation maintenance and upgrade
  - Training sessions in Africa and at JRC
  - Institutional Support (PSCs, TEMs, preparation of Service Contracts)
- Training (TOT)
- On the Job Training
- Thematic Training
- eStation development
- Services

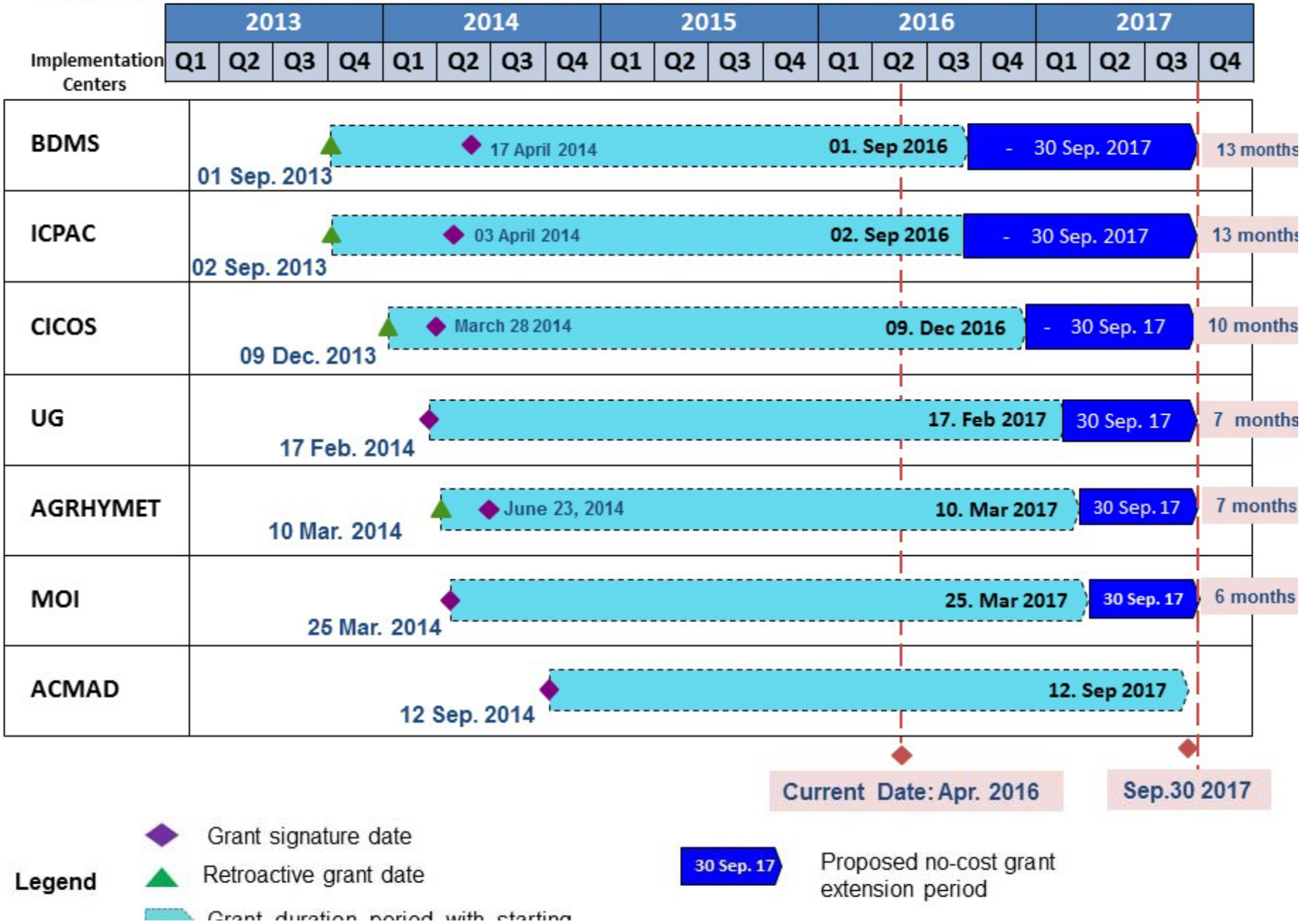
EUMETSAT

- Based on Implementing Arrangement between EUMETSAT and AUC (3 July 2013)
  - Provision of data and products
  - Upgrade of PUMA and AMESD stations
  - Training
  - PSC Secretariat
  - Technical advice to AUC

Regional Training Centres

- IMTR
- EAMAC
- SAWS
- Mauritius Met.

MESA Grant Duration with Proposed No-Cost Extension Period



Thank you